

IN THE CLAIMS:

Please cancel claims 1-40 without prejudice, amend claims 41-56, and add new claims 57-65 as follows:

1. (Canceled).

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Canceled).

6. (Canceled).

7. (Canceled).

8. (Canceled).

9. (Canceled).

10. (Canceled).

11. (Canceled).

12. (Canceled).

13. (Canceled).

14. (Canceled).

15. (Canceled).

16. (Canceled).

17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (Canceled).

21. (Canceled).

22. (Canceled).

23. (Canceled).

24. (Canceled).

25. (Canceled).

26. (Canceled).

27. (Canceled).

28. (Canceled).

29. (Canceled).

30. (Canceled).

31. (Canceled).

32. (Canceled).

A

33. (Canceled).

34. (Canceled).

35. (Canceled).

36. (Canceled).

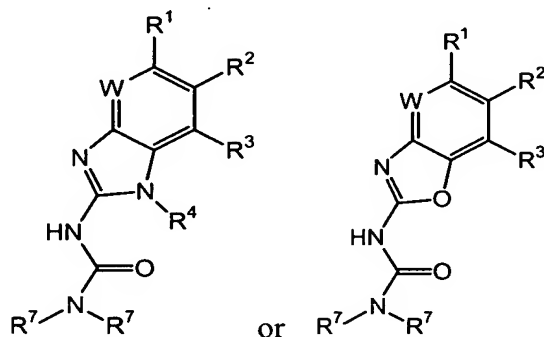
37. (Canceled).

38. (Canceled).

39. (Canceled).

40. (Canceled).

41. (Amended) A compound of formula **IIa** or **IIb**:



or a pharmaceutically acceptable salt derivative or prodrug thereof, wherein:

~~or a pharmaceutically acceptable derivative or prodrug thereof, wherein:~~

W is nitrogen or CR^a;

R^a is selected from hydrogen, halogen, -CF₃, R⁷, -OR⁷, or -N(R⁷)₂;

R¹ is an aryl or heteroaryl ring, wherein said ring is optionally substituted by up to four R⁹;
wherein an R⁹ substituent in the ortho-position of R¹ taken together with R² may form a
fused, unsaturated or partially unsaturated, optionally substituted 5-8 membered ring
having 0-2 ring heteroatoms selected from nitrogen, oxygen, or sulfur;

R^2 and R^3 are each independently selected from R^6 , halogen, CN, SR^6 , OR^6 , $N(R^6)_2$, $NRCO_2R^6$, $NRCON(R^6)_2$, $CON(R^6)_2$, $NRCOR^6$, $NRN(R^6)_2$, COR^6 , CO_2R^6 , $COCOR^6$, SO_2R^6 , $SO_2N(R^6)_2$, or $NRSO_2R^6$; or R^2 and R^3 are taken together to form a fused, unsaturated or partially unsaturated, optionally substituted 5-8 membered ring containing 0-2 ring heteroatoms selected from nitrogen, oxygen, or sulfur;

R^4 is selected from R^6 , $CON(R^6)$, COR^6 , CO_2R^6 , $COCOR^6$, SO_2R^6 , $SO_2N(R^6)_2$, or $(CH_2)_yR^2$; y is 1-6;

Ar is a five membered heteroaryl, heterocyclyl, or carbocyclyl ring, wherein said ring is optionally substituted by up to three substituents selected from oxo, halogen, CN, NO_2 , R^8 , OR^8 , NHR^8 , $NHCOR^8$, $NHCONHR^8$, COR^8 , $CONHR^8$, SO_2R^8 , $NHSO_2NHR^8$ or SO_2NHR^8 ;

each R^6 is independently selected from R^7 or an optionally substituted group selected from alkoxy, hydroxyalkyl, heterocyclyl, heterocyclcylalkyl, aryl, aralkyl, aralkoxy, aryloxyalkyl, heteroaryl, heteroaralkyl, heteroaralkoxy, or heteroaryloxyalkyl;

each R^7 is independently selected from hydrogen or an optionally substituted aliphatic group having one to six carbons, or two R^7 on the same nitrogen taken together with the nitrogen optionally form a four to six member, saturated or unsaturated heterocyclic ring having one to three heteroatoms;

R^8 is a C_1 - C_4 aliphatic group, wherein two R^8 on adjacent positions of Ar , or an aryl or heteroaryl ring, may be taken together with their intervening atoms to form a three to six membered fused ring;

each R^9 is independently selected from oxo, halogen, CN, NO_2 , $T_n(\text{haloalkyl})$, R^6 , SR^6 , OR^6 , OR^8 , $N(R^6)_2$, $CON(R^6)_2$, $CON(R)COR^6$, COR^6 , CO_2R^6 , $CO_2N(R^6)_2$, $COCOR^6$, SO_2R^6 , $SO_2N(R^6)_2$, $N(R)T_nCO_2R^6$, $N(R)T_nCON(R^6)_2$, $N(R)T_nN(R^6)_2$, $N(R)T_nNRCO_2R^6$, $N(R)T_nNRCON(R^6)_2$, $N(R)T_nCOR^6$, $N(R)T_nNRCOR^6$, $N(R)T_nSO_2N(R^6)_2$, $N(R)T_nSO_2R^6$, $T_nPO(OR^7)_2$, $T_nOPO(OR^7)_2$, $T_nSP(OR^7)_2$, $T_nPO(OR^7)_2$, or $T_nNPO(OR^7)_2$;

each Q is an independently selected C_1 - C_3 branched or straight alkyl;

T is selected from $-Q-$ or $-Q_m-CH(Q_m-R^2)-$; and

each m and n are independently selected from zero or one.

42. The compound according to claim 41, wherein said compound has one or more features selected from the group consisting of:

(a) R^1 is an optionally substituted aryl or heteroaryl ring;

(b) R^2 and R^3 are each independently selected from halogen, CN, CO_2R^6 , OR^6 , or R^6 ;
and

(c) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$,
 $N(R)T_nCO_2R^6$, $N(R)T_nNR^6CO_2R^6$, $N(R)T_nN(R^6)_2$, NO_2 , $T_n(\text{haloalkyl})$,
 $CO_2N(R^6)_2$, COR^6 , SO_2R^6 , or $SO_2N(R^6)_2$.

3 ~~43~~. The compound according to claim ~~42~~², wherein:

(a) R^1 is an optionally substituted aryl or heteroaryl ring;

(b) R^2 and R^3 are each independently selected from halogen, CN, CO_2R^6 , OR^6 , or R^6 ;
and

(c) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$,
 $N(R)T_nCO_2R^6$, $N(R)T_nNR^6CO_2R^6$, $N(R)T_nN(R^6)_2$, NO_2 , $T_n(\text{haloalkyl})$,
 $CO_2N(R^6)_2$, COR^6 , SO_2R^6 , or $SO_2N(R^6)_2$.

41 4 ~~44~~. The compound according to claim ~~42~~², wherein said compound has one or more
features selected from the group consisting of:

(a) R^1 is an optionally substituted ring selected from phenyl, 2-pyridyl, 3-pyridyl, 4-
pyridyl, thienyl, pyrimidyl, imidazol-1-yl, imidazol-2-yl, pyrazol-1-yl, amino-
pyrimidinyl, quinolinyl, aminobenzimidazole, or indolyl;

(b) R^2 is hydrogen, alkoxy, aminoalkyl, or halogen;

(c) R^3 is hydrogen, alkoxy, aralkoxy, or halogen;

(d) R^4 is hydrogen or $(CH_2)_yR^2$; and

(e) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$,
or $N(R)T_nCO_2R^6$.

5 ~~45~~. The compound according to claim ~~44~~⁴, wherein:

(a) R^1 is an optionally substituted ring selected from phenyl, 2-pyridyl, 3-pyridyl, 4-
pyridyl, thienyl, pyrimidyl, imidazol-1-yl, imidazol-2-yl, pyrazol-1-yl, amino-
pyrimidinyl, quinolinyl, aminobenzimidazole, or indolyl;

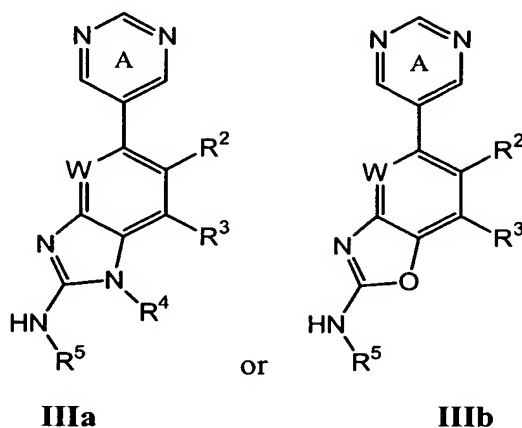
(b) R^2 is hydrogen, alkoxy, aminoalkyl, or halogen;

(c) R^3 is hydrogen, alkoxy, aralkoxy, or halogen;

(d) R^4 is hydrogen or $(CH_2)_yR^2$; and

(e) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$,
or $N(R)T_nCO_2R^6$.

6 46. (Amended) A compound of formula IIIa or IIIb:



Al or a pharmaceutically acceptable salt derivative or prodrug thereof, wherein:

W is nitrogen or CR^a;

R^a is selected from hydrogen, halogen, -CF₃, R⁷, -OR⁷, or -N(R⁷)₂;

Ring A is optionally substituted with up to three R⁹; wherein when an R⁹ substituent is in the ortho-position of Ring A, said R⁹ substituent may be taken together with R² to form an optionally substituted 5-7 membered ring containing 0-2 ring heteroatoms selected from nitrogen, oxygen, or sulfur;

R² and R³ are each independently selected from R⁶, halogen, CN, SR⁶, OR⁶, N(R⁶)₂, NR(CO₂R⁶), NRCON(R⁶)₂, CON(R⁶)₂, NRCOR⁶, NRN(R⁶)₂, COR⁶, CO₂R⁶, COCOR⁶, SO₂R⁶, SO₂N(R⁶)₂, or NR(SO₂R⁶); or R² and R³ are taken together to form a fused, unsaturated or partially unsaturated, optionally substituted 5-8 membered ring containing 0-2 ring heteroatoms selected from nitrogen, oxygen, or sulfur;

R⁴ is selected from R⁶, CON(R⁶), COR⁶, CO₂R⁶, COCOR⁶, SO₂R⁶, SO₂N(R⁶)₂, or (CH₂)_yR²; y is 1-6;

R⁵ is selected from R⁷, Ar, COAr, CON(R⁷)Ar, (CH₂)_yCO₂R, (CH₂)_yN(R⁷)₂, C(=NR¹⁰)-N(R⁷)₂, C(=NR¹⁰)-NRCOR, C(=S)-N(R⁷)₂, CON(R⁷)₂, COR, SO₂R, or SO₂N(R⁷)₂;

Ar is a five membered heteroaryl, heterocyclyl, or carbocyclyl ring, wherein said ring is optionally substituted by up to three substituents selected from oxo, halogen, CN, NO₂, R⁸, OR⁸, NHR⁸, NHCOR⁸, NHCONHR⁸, COR⁸, CONHR⁸, SO₂R⁸, NH(SO₂NHR⁸) or SO₂NHR⁸;

each R^6 is independently selected from R^7 or an optionally substituted group selected from alkoxy, hydroxyalkyl, heterocyclyl, heterocyclcylalkyl, aryl, aralkyl, aralkoxy, aryloxyalkyl, heteroaryl, heteroaralkyl, heteroaralkoxy, or heteroarayloxyalkyl;

each R^7 is independently selected from hydrogen or an optionally substituted aliphatic group having one to six carbons, or two R^7 on the same nitrogen taken together with the nitrogen optionally form a four to six member, saturated or unsaturated heterocyclic ring having one to three heteroatoms;

R^8 is a C_1 - C_4 aliphatic group, wherein two R^8 on adjacent positions of Ar, or an aryl or heteroaryl ring, may be taken together with their intervening atoms to form a three to six membered fused ring;

each R^9 is independently selected from oxo, halogen, CN, NO_2 , $T_n(\text{haloalkyl})$, R^6 , SR^6 , OR^6 , OR^8 , $N(R^6)_2$, $CON(R^6)_2$, $CON(R)COR^6$, COR^6 , CO_2R^6 , $CO_2N(R^6)_2$, $COCOR^6$, SO_2R^6 , $SO_2N(R^6)_2$, $N(R)T_nCO_2R^6$, $N(R)T_nCON(R^6)_2$, $N(R)T_nN(R^6)_2$, $N(R)T_nNR^6CO_2R^6$, $N(R)T_nNRCON(R^6)_2$, $N(R)T_nCOR^6$, $N(R)T_nNRCOR^6$, $N(R)T_nSO_2N(R^6)_2$, $N(R)T_nSO_2R^6$, $T_nPO(OR^7)_2$, $T_nOPO(OR^7)_2$, $T_nSP(OR^7)_2$, $T_nPO(OR^7)_2$, or $T_nNPO(OR^7)_2$;

each Q is an independently selected C_1 - C_3 branched or straight alkyl;

T is selected from $-Q-$ or $-Q_m-CH(Q_m-R^2)-$;

each m and n are independently selected from zero or one; and R^{10} is selected from R^7 or Ar.

7 ~~47~~. The compound according to claim ~~46~~, wherein said compound has one or more features selected from the group consisting of:

- (a) R^2 and R^3 are each independently selected from halogen, CN, CO_2R^6 , OR^6 , or R^6 ;
- (b) R^5 is CO_2R , $COAr$, COR , $CON(R^7)_2$, Ar, $(CH_2)_yCO_2R$, or $(CH_2)_yN(R^7)_2$; and
- (c) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$, $N(R)T_nCO_2R^6$, $N(R)T_nNR^6CO_2R^6$, $N(R)T_nN(R^6)_2$, NO_2 , $T_n(\text{haloalkyl})$, $CO_2N(R^6)_2$, COR^6 , SO_2R^6 , or $SO_2N(R^6)_2$.

8 ~~48~~. The compound according to claim ~~47~~, wherein:

- (a) R^2 and R^3 are each independently selected from halogen, CN, CO_2R^6 , OR^6 , or R^6 ;
- (b) R^5 is CO_2R , $COAr$, COR , $CON(R^7)_2$, Ar, $(CH_2)_yCO_2R$, or $(CH_2)_yN(R^7)_2$; and
- (c) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$, $N(R)T_nCO_2R^6$, $N(R)T_nNR^6CO_2R^6$, $N(R)T_nN(R^6)_2$, NO_2 , $T_n(\text{haloalkyl})$, $CO_2N(R^6)_2$, COR^6 , SO_2R^6 , or $SO_2N(R^6)_2$.

9 49. The compound according to claim ⁷47, wherein said compound has one or more features selected from the group consisting of:

- (a) R^2 is hydrogen, alkoxy, aminoalkyl, or halogen;
- (b) R^3 is hydrogen, alkoxy, aralkoxy, or halogen;
- (c) R^4 is hydrogen or $(CH_2)_yR^2$;
- (d) R^5 is $CON(R^7)_2$, Ar, $(CH_2)_yCO_2R$, or $(CH_2)_yN(R^7)_2$; and
- (e) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$, or $N(R)T_nCO_2R^6$.

10 50. The compound according to claim ⁹49, wherein:

- (a) R^2 is hydrogen, alkoxy, aminoalkyl, or halogen;
- (b) R^3 is hydrogen, alkoxy, aralkoxy, or halogen;
- (c) R^4 is hydrogen or $(CH_2)_yR^2$;
- (d) R^5 is $CON(R^7)_2$, Ar, $(CH_2)_yCO_2R$, or $(CH_2)_yN(R^7)_2$; and
- (e) R^9 is halogen, CN, oxo, R^6 , SR^6 , OR^6 , $N(R^6)_2$, $CON(R^6)_2$, CO_2R^6 , $CON(R)COR^6$, or $N(R)T_nCO_2R^6$.

13 51. (Amended) A composition comprising an effective amount of a compound according to any one of claims ¹41 to ¹⁰50; and a pharmaceutically acceptable carrier.

14 52. The composition according to claim ¹³51, wherein said compound is formulated in a pharmaceutically acceptable manner for administration to a patient.

15 53. (Amended) The composition according to claim ¹³51 further comprising an additional therapeutic agent an antibiotic, an anti-inflammatory agent, a matrix metalloprotease inhibitor, a lipoxigenase inhibitor, a cytokine antagonist, an immunosuppressant, an anti-cancer agent, an anti-viral agent, a cytokine, a growth factor, an immunomodulator, a prostaglandin or an anti-vascular hyperproliferation compound.

16 54. (Amended) The composition according to claim ¹⁴53 further comprising an additional therapeutic agent an antibiotic, an anti-inflammatory agent, a matrix metalloprotease inhibitor, a lipoxigenase inhibitor, a cytokine antagonist, an immunosuppressant, an anti-cancer agent, an anti-viral agent, a cytokine, a growth factor, an immunomodulator, a prostaglandin or an anti-vascular hyperproliferation compound.

17 ¹³ 55. The composition according to claim 51 further comprising an agent that increases the susceptibility of bacterial organisms to antibiotics.

18 ¹⁵ 56. The composition according to claim 53 further comprising an agent that increases the susceptibility of bacterial organisms to antibiotics.

11 ¹¹ 57. (New) A compound selected from the group consisting of:

No. Ia-	Structure	No. Ia-	Structure
20		25	
28		29	
33		35	
38		40	
-	-	42	
43		44	
45		46	

No. Ia-	Structure	No. Ia-	Structure
47		48	
49		50	
51		52	
53		54	
55		56	
57		58	
59		60	
61		62	
63		64	
65		66	

A

No. Ia-	Structure	No. Ia-	Structure
68			
83		84	
89		92	
98		99	
100		102	
103		104	
105		106	

No. Ia-	Structure	No. Ia-	Structure
107		108	
109		110	
111		112	
113		116	
117		118	
119		120	
121		-	-
123		124	

11

A

No. Ia-	Structure	No. Ia-	Structure
125		126	
127		128	
129		130	
131		132	
133		134	
135		136	

Al

18

No. Ia-	Structure	No. Ia-	Structure
137		138	
139		140	
141		142	
143		144	
145		146	
147		148	
149		150	

No. Ia-	Structure	No. Ia-	Structure
151		152	
153		154	
155		156	
157		158	
159		160	
161		162	
163		164	
165		166	

No. Ia-	Structure	No. Ia-	Structure
167		168	
169		170	
171		172	
173		174	
175		176	
177		178	
179		180	
181		182	
183		184	

7

No. Ia-	Structure	No. Ia-	Structure
185		186	
187		188	
189		190	
191		192	
193		194	
195		196	
197		198	
199		and 200	

Al

4

12

58. (New) A compound selected from the group consisting of:

No. Ib-	Structure	No. Ib-	Structure
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	
15		16	

No. Ib-	Structure	No. Ib-	Structure
17		20	
21		22	
23		24	
25		26	
27		and 28	

19
59. (New) A method of decreasing bacterial quantity in a biological sample comprising the step of contacting said biological sample with a compound according to either of claims 41 or 46.

20
60. (New) The method according to claim 59 further comprising the step of contacting said biological sample with an agent which increases the susceptibility of bacterial organisms to antibiotics.

21
61. (New) A method of inhibiting gyrase in a mammal, comprising the step of administering to said mammal a composition according to claim ~~51~~ ¹³.

22
62. (New) A method of treating a bacterial infection in a mammal in need thereof, comprising the step of administering to said mammal a therapeutically effective amount of a composition according to claim ~~51~~ ¹³.

23
63. (New) The method according to claim ~~62~~ ²², wherein the bacterial infection to be treated is characterized by the presence of one or more of the following: *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Enterococcus fecalis*, *Enterococcus faecium*, *Klebsiella pneumoniae*, *Enterobacter* *sps.* *Proteus* *sps.* *Pseudomonas aeruginosa*, *E. coli*, *Serratia marcesens*, *S. aureus*, or *Coag. Neg. Staph.*

24
64. (New) The method according to claim ~~62~~ ²², wherein the bacterial infection to be treated is selected from one or more of the following: urinary tract infections, pneumonia, prostatitis, skin and soft tissue infections, intra-abdominal infections, or infections of febrile neutropenic patients.

25
65. The method according to claim ~~62~~ ²² further comprising the step of administering to said patient an antibiotic, an anti-inflammatory agent, a matrix metalloprotease inhibitor, a lipoxxygenase inhibitor, a cytokine antagonist, an immunosuppressant, an anti-cancer agent, an anti-viral agent, a cytokine, a growth factor, an immunomodulator, a prostaglandin or an anti-vascular hyperproliferation compound, either as part of a multiple dosage form together with said compound or as a separate dosage form.

26
66. The method according to claim ~~62~~ ²² further comprising the step of administering to said patient an agent that increases the susceptibility of bacterial organisms to antibiotics.